

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A gear transmission device comprising:

a pair of first and second fixed walls, said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft;

a first gear positioned on said first gear shaft between said first and second fixed walls, said first gear being axially moveable with respect to said first and second fixed walls;

and

regulating means positioned between the first gear and the second fixed wall, the regulating means adapted to regulate an increase of a bending amount of an elastic member by a predetermined value or more,

wherein the regulating means includes:

a plane washer having one face positioned against a planar surface on an end face of the second fixed wall;

a cylindrical portion being formed on a first opposed end face of the first gear;

the elastic member positioned between the cylindrical portion and the plane washer;

a predetermined space formed between the cylindrical portion and the plane washer in contact with the second fixed wall,

wherein said cylindrical portion is capable of operative contact with said planar end surface of said second end wall through direct contact with the plane washer, and is capable of regulating a bending amount of said elastic member to a predetermined amount,

~~wherein the one face of the plane washer has a surface area at least as large as that of the end face of the second fixed wall, and~~

~~wherein an outer diameter of the plane washer is greater than an inner diameter of the cylindrical portion formed on the first gear,~~

wherein the elastic member is a deformable closed ring, and

wherein an outer perimeter of the elastic member has a circular shape when viewed in plan view, and an inner perimeter of the elastic member has a non-circular shape when viewed in plan view.

2. (Previously Presented) The gear transmission device according to claim 1, further comprising a second shaft having a relatively large diameter gear on a first end and a relatively small diameter gear on a second end, with a space separating the relatively large diameter gear and the relatively small diameter gear, wherein said small diameter gear operatively engages said first gear positioned on said first gear shaft positioned between said first and second fixed walls.

3. (Previously Presented) The gear transmission device according to claim 1, further comprising a large diameter ring gear operatively engaged with said first gear, wherein said first gear is an idle gear and said first gear shaft is an idle gear shaft.

4-7. (Cancelled)

8. (Currently Amended) The gear transmission device according to claim 1, wherein said elastic member is a wave washer, and wherein

at least a portion of the inner perimeter of the wave washer fits directly around an outer circumference of said first gear shaft.

9. (Previously Presented) The gear transmission device according to claim 2, wherein said elastic member is a wave washer.

10. (Previously Presented) The gear transmission device according to claim 3, wherein said elastic member is a wave washer.

11-15. (Cancelled)

16. (Previously Presented) The gear transmission device according to claim 1, wherein the plane washer is disposed in a position opposite to said cylindrical portion.

17. (Currently Amended) A gear transmission device comprising:
a pair of first and second fixed walls, said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft;

a first gear positioned on said first gear shaft between said first and second fixed walls, said first gear being axially moveable with respect to said first and second fixed walls;

~~a cylindrical portion being formed on formed on a first opposed end face of the first gear;~~

regulating means comprising an elastic member; and

a single cylindrical portion being formed on a first opposed end face of the first gear, the cylindrical portion facing in a direction ~~toward said~~ toward a planar surface on the end face of the second fixed wall,

the elastic member being positioned between said first gear and said second fixed wall and being adapted to regulate an increase of a bending amount of the elastic member by a predetermined value or more,

wherein at least a portion of the inner perimeter of the wave washer fits directly around an outer circumference of said first gear shaft.

18. (Previously Presented) The gear transmission device according to claim 17, further comprising a second shaft having a relatively large diameter gear on a first end and a relatively small diameter gear on a second end, with a space separating the relatively large diameter gear and a relatively small diameter gear, wherein said small diameter gear operatively engages said first gear positioned on said first gear shaft positioned between said first and second fixed walls.

19. (Previously Presented) The gear transmission device according to claim 17, further comprising a large diameter ring gear operatively engaged with said first gear, wherein said first gear is an idle gear and said first gear shaft is an idle gear shaft.

20. (Currently Amended) The gear transmission device according to claim 17, wherein said elastic member is ~~surrounded by a deformable closed ring that has an~~ outer diameter substantially equal to an inner diameter of the said single cylindrical portion.

21. (Cancelled)

22. (Currently Amended) The gear transmission device according to claim 17, wherein the regulating means includes a plane washer disposed in a position opposite to said single cylindrical portion.

23. (Currently Amended) A gear transmission device comprising:
a pair of first and second fixed walls, said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft;
a first gear having a cylindrical portion formed on one side thereof, the first gear being positioned on said first gear shaft between said first and second fixed walls and being axially moveable with respect to said first and second fixed walls,
regulating means comprising

an elastic member having first and second surfaces, the elastic member being disposed directly around the first gear shaft with the first side thereof directly facing the fixed gear; and

a plane washer disposed directly around the first gear shaft, the plane washer having a first side with an inner surface portion directly facing a second surface of the elastic member, and

an outer surface portion disposed radially outward with respect to the inner surface portion and directly facing ends of the cylinder portion positioned between said first gear and said second fixed wall,

wherein the regulating means is adapted to regulate an increase of a bending amount of the elastic member by a predetermined value or more,

and when the elastic member is in a compressed state, only the outer surface portion is able to contact the ends of the cylinder portion.

24. (Previously Presented) The gear transmission device according to claim 23, further comprising a second shaft having a relatively large diameter gear on a first end and a relatively small diameter gear on a second end, with a space separating the relatively large diameter gear and a relatively small diameter gear, wherein said relatively small diameter gear operatively engages said first gear positioned on said first gear shaft positioned between said first and second fixed walls.

25. (Currently Amended) The gear transmission device according to claim 1, wherein the ~~one face~~ a second side of the plane washer is larger than the end face of the second fixed wall, and the end face of the second fixed wall is smaller than the cylindrical portion formed on the first gear.

26. (Cancelled)

27. (Previously Presented) The gear transmission device according to claim 1, in a case where the cylindrical portion is not in direct contact with the plane washer and a predetermined space lies therebetween, a portion of the elastic member extends into a predetermined space beyond the cylindrical portion and presses against the plane washer , and

in a case where the cylindrical portion is in direct contact with the plane washer, thereby eliminating the predetermined space, the elastic member is compressed and no longer extends beyond the cylindrical portion.

28. (Previously Presented) The gear transmission device according to claim 1, in a case where the cylindrical portion is in direct contact with the plane washer, the elastic member is compressed to a thickness equal to an inner axial length of the cylindrical portion.